Bear Island West Review

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Review was requested by DNR staff through the Waterfowl Advisory Committee to:

1. **To consider recent down-trending waterfowl harvest,**
2. **Examine waterfowl hunt management,**
3. **Assess habitat, and**
4. **Determine if recommendations have potential to improve wintering waterfowl numbers and hunter harvest opportunity.**

Bear Island West Review

- **Review Team: Michael Prevost, Bob Perry, Lew Crouch and Bill Mace.**
- **Members > 150 years experience in coastal/tidal wetland habitat management with emphasis on brackish habitats.**
- **DNR Staff: Daniel Barrineau (BI Project Leader), Molly Kneece (Statewide Waterfowl Biologist), Alicia Farrell (Region 4 Coordinator), and Billy Dukes (Chief of Wildlife).**
- **Informed by: Current management plan, previous external review, waterfowl harvest data, on-site DNR staff input, site visit, comprehensive discussion, and literature review.**
- **Not intended to replace recent external Bear Island WMA review, but to supplement it with additional options to consider.**

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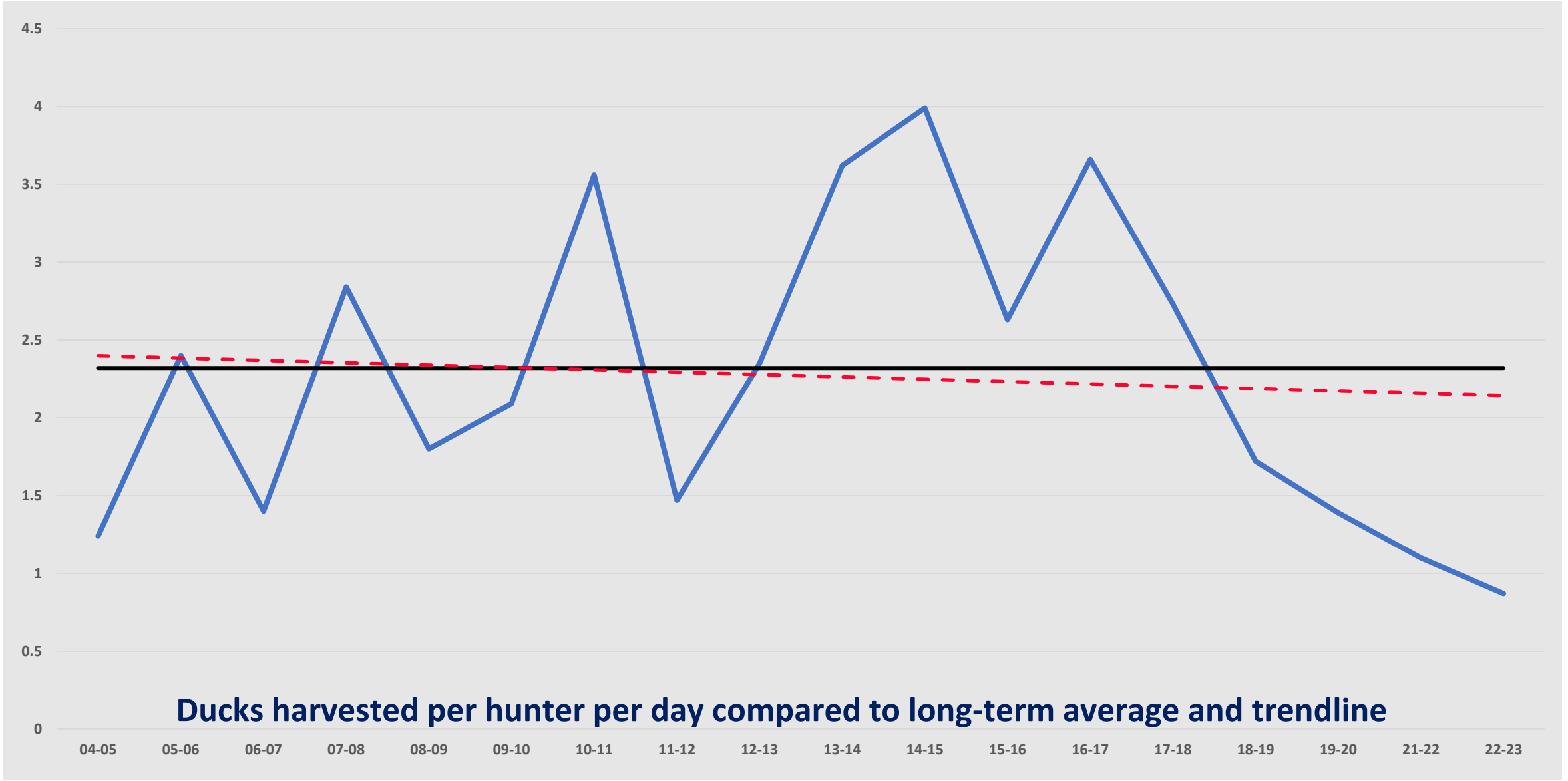
We recognize limitations beyond management control:

1) **Climate Change resulting in:**
    a) **Dynamic precipitation affecting estuarine salinity,**
    b) **Sea-level rise affecting tidal amplitude,**
    c) **Extended growing seasons influencing wetland management, and**
    d) **Warmer Fall & Winters affecting waterfowl migration.**
2) **Atlantic Flyway and North American waterfowl “bpop” numbers.**
3) **Local waterfowl energy needs.**
4) **Disturbance from adjacent public-water hunting.**
5) **Competitive influences of nearby large, well-managed properties.**
6) **Bathymetric variation influencing habitat within individual MTIs.**

Bear Island West Waterfowl Harvest 2004-05 to 2022-23



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Other success factors that might be considered in addition to ducks harvested per hunter per day:

1) **Total experience enjoyment,**
2) **Number of shots fired,**
3) **Un-retrieved ducks,**
4) **Regular survey sampling of numbers of ducks utilizing BI MTIs, and**
5) **Science-based modeling.**

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Local Habitat Perspective:

- BI competes with large, well-managed properties having carefully structured hunt management limiting disturbance.
- Likely has a negative impact on Bear Island WMA daily waterfowl utilization.
- Cheeha-Combahee, Fenwick Island, Pon Pon & Hope plantations manage for minimum disturbance thus sustaining waterfowl and quality hunting.
- Grove Plantation & Jehosse Island (ACE Basin NWR) serve as inviolate sanctuaries.

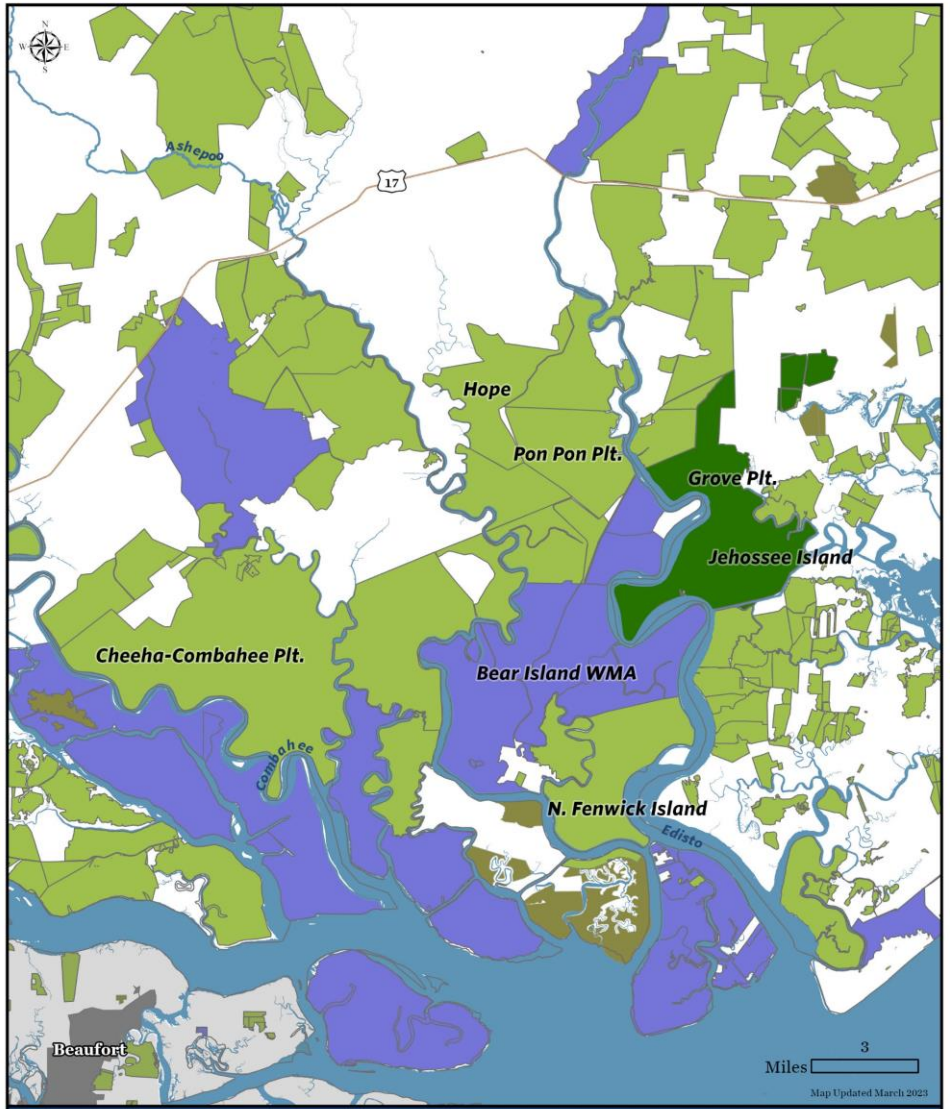

Figure 2. Regionally Significant Waterfowl Habitat Proximate to Bear Island WMA.

Bear Island West Review

Alternative Hunt Management Structure:

- Currently 40 hunters/week on all units = 3 hunt days per week.
- Alternative = 20 hunters/week
  Wednesday & Saturday
  = no change in opportunity
  = reduction in hunt days to 2.
- Manager selects from all 3 hunt units the MTIs having good duck use providing the potential for optimum hunter success.

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Provision of Sanctuary:

We recommend establishing 1 sanctuary MTI on each BI Unit, based on:

1) Adequate size,
2) Ability for effective habitat management,
3) Adequate buffering from human disturbance, and
4) Central location providing positive duck use influencing adjacent MTIs.

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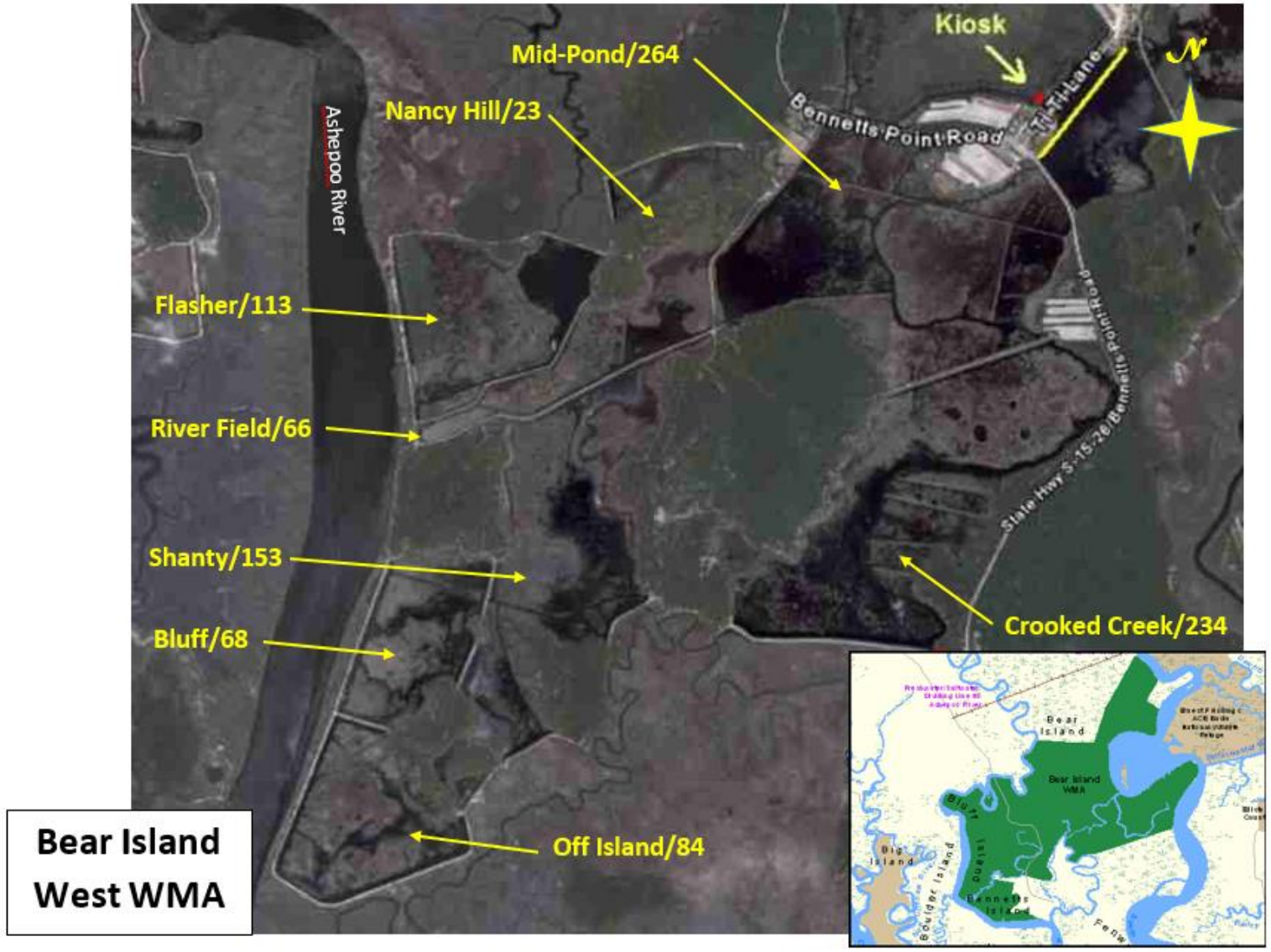
Figure 1. Bear Island West and individual Managed Tidal Impoundments and acreages of each.



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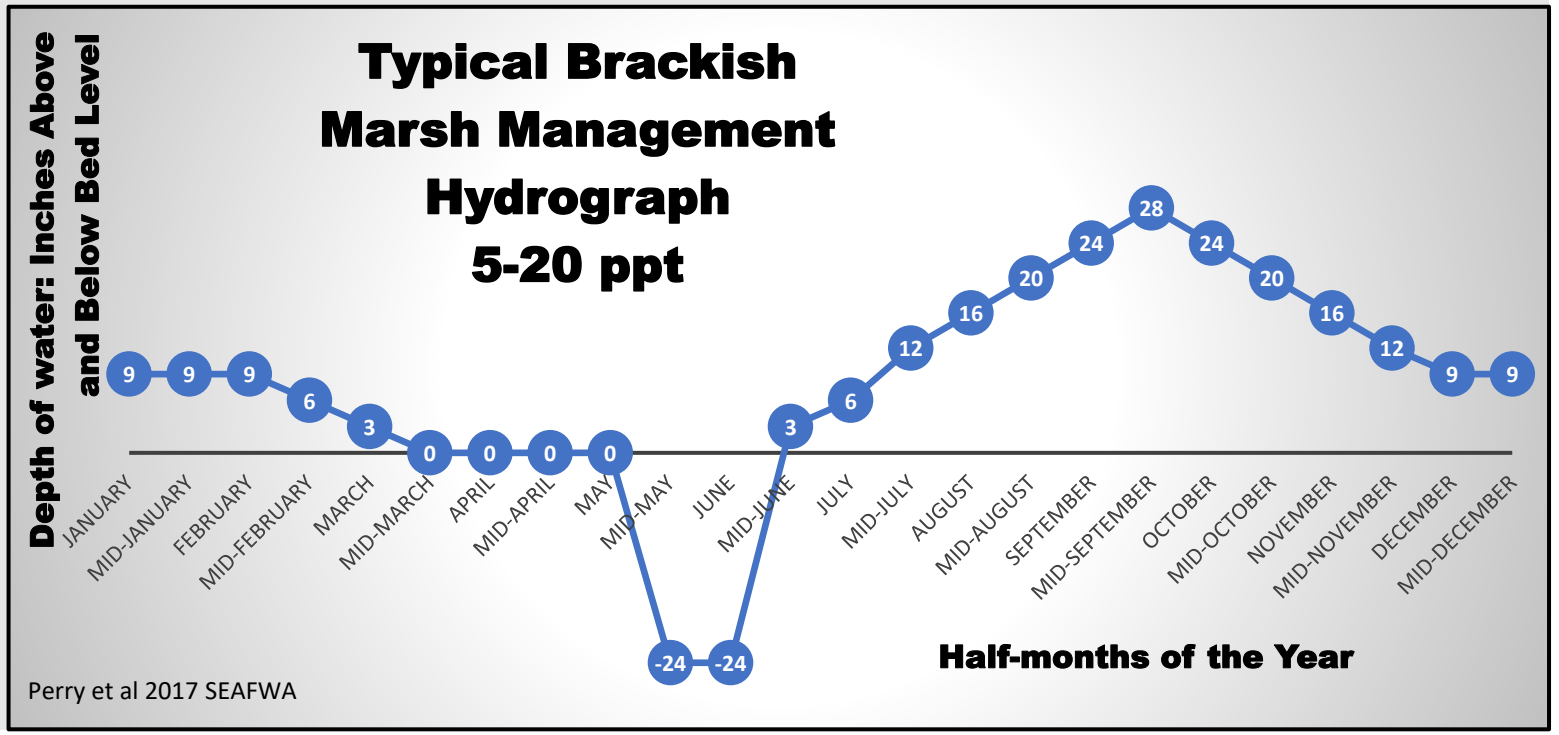
Habitat Management:

- BIW MTIs are managed under typical brackish marsh management.
- Target species are widgeon grass, muskgrass, dwarf spikerush and saltmarsh bulrush as well as nektonic and benthic invertebrates.
- Current management involves April/mid-May drawdown for 2-4 weeks followed by shallow re-flooding and water circulation throughout the growing season.



Perry et al 2017 SEAFWA

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Habitat Management:

We have provided DNR staff a comprehensive list of alternative management strategies for 3 groups of MTIs on BIW that focus on:

1) Combating competing emergent vegetation,
2) Use of fire and mechanized equipment,
3) Strategies to deal with mid- to late summer algal growth,
4) Enhancing SAV attractiveness/nutrition,
5) Creating a hemi-marsh effect,
6) Avoiding conditions of excess soil acidity, and
7) BMPs for seasonal water-level management.

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Water Control Structures:

We recognize and recommend :

1) **Number, location & size of WCSs are critical for effective brackish habitat management,**
2) **Consider a 2nd full-sized trunk to be installed in Off Island on the Ashepoo River, to more effectively manage water volume,**
3) **Consider that spillways on all boxes should be external vs internal to provide maximum water management,**
4) **Consider that additional trunks and spillways may be needed to compensate for dimensional modifications limiting desired water management, and**
5) **The Project Manager should have final determination on all new infrastructure – water control structures and dikes.**

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Staffing:

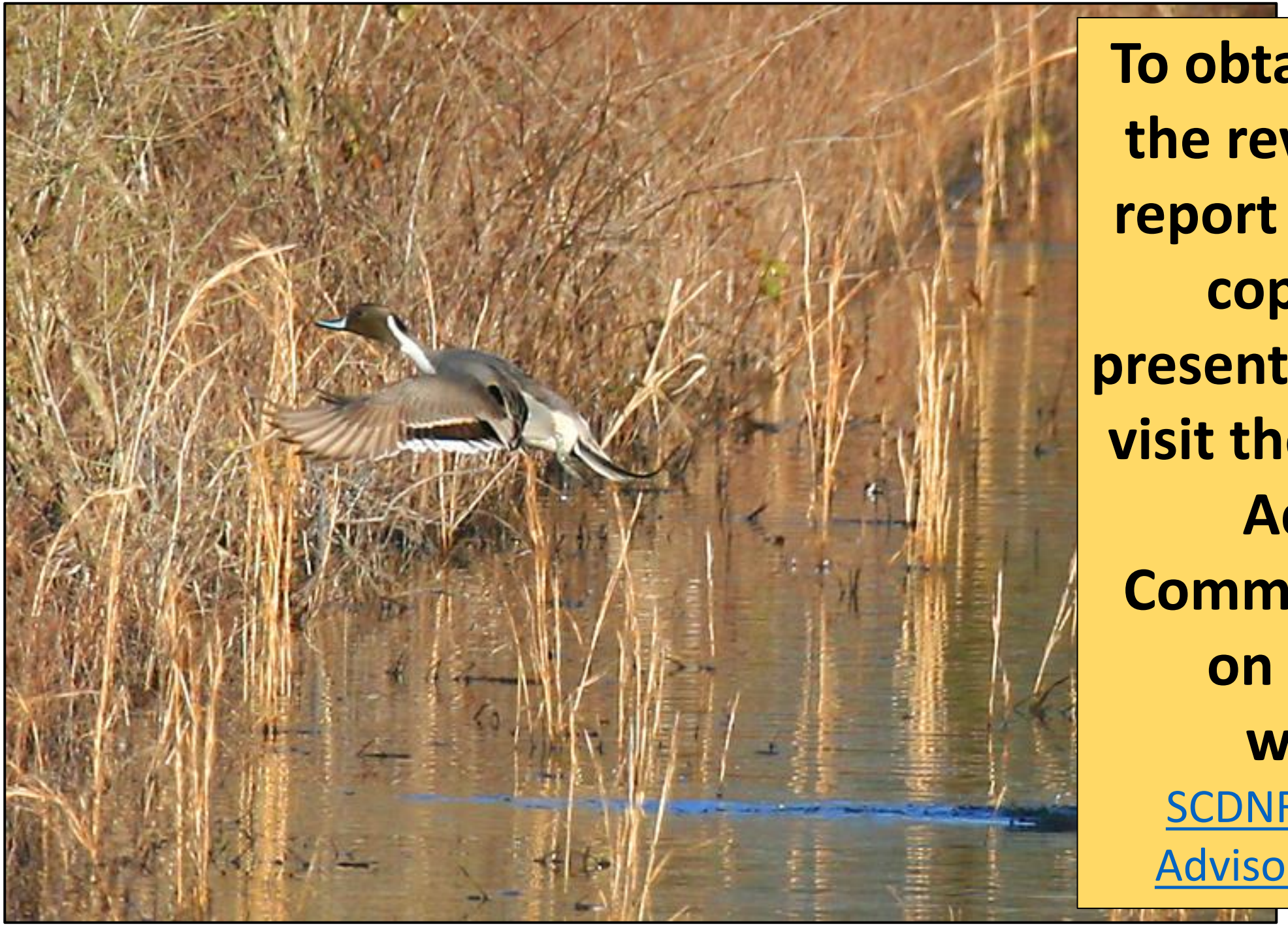
Having a sound understanding of the responsibilities and complexities of managing habitats like Bear Island in addition to Donnelley, Botany Bay and Edisto River WMAs, we recommend:

DNR consider hiring of a highly qualified Technician IV to assist in the lead role on comprehensive water and wetland management and associated infrastructure on Bear Island WMA.

Such a candidate should possess:

1) **An aptitude for coastal wetland management,**
2) **A strong background in southeastern marsh plant ecology, and**
3) **An understanding of wetland management as well as MTI construction and maintenance in accordance with regulatory guidelines.**


Questions?



To obtain a copy of the review team's report or to view a copy of this presentation, please visit the Waterfowl Advisory Committee's page on the DNR website:

SCDNR - Waterfowl Advisory Committee